

Amendment and Response

Applicant: Scott D. Sturgeon et al.

Serial No.: 10/035,588

Filed: October 18, 2001

Docket No.: 10001084-1

Title: REPLACEABLE INK CONTAINER FOR AN INKJET PRINTING SYSTEM

REMARKS

This Amendment and Response replies to the Non-Final Office Action mailed October 16, 2003, in which claims 1-18 were rejected. With this Response, no claims have been amended. Claims 1-18 remain pending in the application and are presented for reconsideration and allowance.

Claim Rejections under 35 U.S.C. § 102

Claims 1-4 and 7 stand rejected under 35 U.S.C. §102(b) as being anticipated by Suzuki et al. (U.S. Patent No. 5,622,439). Suzuki et al. is said to disclose in Figures 1-5 an ink jet recording apparatus comprising: a receiving station 1 having an unmarked fluid inlet 12 and a pair of guide slots 35; an ink container 2a, 2b having a fluid outlet (not shown), a first guide feature 49 located at a trailing end relative to an insertion direction C; and wherein the first guide feature 49 to cooperate with one guide slot 35 to guide the ink container 2a, 2b in a pivoted motion.

The Examiner's rejection is respectfully traversed. Specifically, the Applicant believes the Examiner's characterization of Suzuki et al. is in error and, contrary to the Examiner's assertions, does not anticipate every element of the claimed invention. Independent claim 1 of the present application states that "the first guide feature is configured to cooperate with the at least one guide slot to guide the ink container in a pivot motion". As best seen in Figures 1 and 5 of Suzuki, the ink supply tanks 2a, 2b of Suzuki et al. are received in holder 70 in an insertion direction C. As described from column 5, line 61 through column 6, line 20, after ink tanks 2a, 2b are inserted into holder 70, **holder 70 is turned (i.e., pivoted) about projection 71** until projection 49 on the side of ink tanks 2a, 2b contacts guide slot 35 in frame 30 to position tanks 2a, 2b with respect to frame 30. Continued turning of the *holder 70* causes engagement of tanks 2a, 2b with port 41. **Clearly, all pivoting motion of tanks 2a, 2b is directed and/or controlled by the pivoting of holder 70 about projection 71, and not by projection 49 or slot 35, either individually or by their interaction.** Accordingly, projection 49 and slot 35 do not cooperate "to guide the ink container in a pivot motion", as required by the language of independent claim 1.

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For at least the reason set forth above, Suzuki et al. does not anticipate each and every element as set forth in independent claim 1. Therefore, Applicant respectfully requests the withdrawal of the rejection of claim 1 under 35 U.S.C. §102(b) as being anticipated by Suzuki et al.

Dependent claims 2-4 and 7 each depend, either directly or indirectly, from independent claim 1, which is allowable for the reasons set forth above. Therefore, claims 2-4 and 7 are also in allowable condition, and Applicant respectfully requests the withdrawal of the rejection of claims 2-4 and 7 under 35 U.S.C. §102(b) as being anticipated by Suzuki et al.

Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-18 stand rejected under 35 U.S.C. §103 as being anticipated by Morita et al. (U.S. Patent No. 6,390,601) in view of Suzuki et al. (U.S. Patent No. 5,622,439) and further in view of Kashimura et al. (U.S. Patent No. 5,847,731).

Morita et al. is said to disclose in Figures 7, 9B, 9D, 9F, 12 and 18 an ink jet recording apparatus comprising: a receiving station 36 having slots 38a, 38b, 39a, 39b; a guide feature 33a, 33b outwardly extending therefrom, the guide feature disposed toward a leading end relative to an insertion direction (Figure 9B); wherein the guide feature 33a, 33b is configured to cooperate with the at least one guide slot 38a, 38b to guide the ink container 30 in a pivot motion to ensure the ink container engages the inherent compliant seal forming a seal therewith (Fig. 9D). Morita et al. is acknowledged as failing to disclose a guide slot engagement feature disposed toward the leading end and the trailing end of the ink container. Nevertheless, Suzuki et al. is said to teach a printing device in Figure 5 comprising an ink container 2 having a guide feature 49 positioned toward the trailing end for guiding the trailing ink container during insertion. Kashimura et al. is said to teach in Figures 6A-6D a printing device comprising an ink container 10 having a slot feature 10b for guiding the leading end of the ink container during insertion.

The Examiner finds it would have been obvious to a person having skill in the art at the time the invention was made to incorporate the teaching of the slot feature disposed toward the trailing end and the leading end of the ink container as taught by Suzuki et al. and Kashimura et al. into the device of Morita et al. for the purpose of guiding the leading

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end and the trailing end of the ink container during insertion to protect the ink container from damage due to misalignment between the ink container and the holder. The Examiner's rejection is respectfully traversed for the reasons set forth below.

To establish a *prima facie* case of obviousness: 1) there must be some suggestion or motivation to modify the reference to or combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the prior art references must teach or suggest all the claim limitations. MPEP § 2143. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure. MPEP § 2143.01.

Contrary to the Examiner's suggestion, there is no motivation to combine the references in the prior art. Each of the cited references provides a different combination of features that accurately guide the respective ink container during its insertion so as to prevent damage to the ink container. There is no suggestion in any of the references that the disclosed guide features are insufficient to prevent damage to the ink container as it is inserted. Further, Morita et al. utilizes the interaction of moveable lever 31, first pawl 32, and first hold 26 of the ink tank 30 in order to control the rate of motion and the final position of ink tank 30 in tank holder 36. (*See, e.g.* Col. 9, ll. 1-10, Figs. 8B-8D & 9B-9F). Therefore, the projection 49 and slot 35 of Suzuki et al. perform a function that is already performed by the ink tank of Morita et al. As such, for at least each of these reasons individually, there is no motivation to combine the various guide features of Morita et al., Suzuki et al. and Kashimura et al. in an attempt to prevent damage.

Further, the proposed modification of Morita et al. requires changing the principle of operation of Morita et al. Specifically, as described with reference to Figures 9A-9F in Morita et al., the interaction of pawls 34a, 34b with holes 39a, 39b, and pawls 33a, 33b with holes 38a, 38b on the same side wall of ink tank 30 is required in the method of inserting tank 30. Adding additional guide features on the opposite side wall of ink tank 30 as suggested by the Examiner would require a substantial reconstruction and redesign of the elements shown in Morita et al., as well as a change in the basic principle under which the Morita et al. construction was designed to operate.

Further, even if the references are combined as suggested by the Examiner, there is no reasonable expectation of success. As noted above, adding additional guide features

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to Morita et al. as suggested by the Examiner would require a substantial reconstruction and redesign of the elements shown in Morita et al., as well as a change in the basic principle under which the Morita et al. construction was designed to operate. In view of such necessary reconstruction and redesign, there is not a reasonable expectation that the modified device would operate as intended.

For at least these reasons, the references cannot be combined to achieve the invention of independent claim 8. Therefore, Applicants respectfully request withdrawal of the rejection of independent claim 8 under 35 U.S.C. §103.

Moreover, the combination of Morita et al., Suzuki et al. and Kashimura et al. does not disclose each of the elements of independent claim 1. Independent claim 1 sets forth that the ink container has a first guide feature disposed toward a trailing end of the ink container relative to an insertion direction, and the first guide feature is configured to cooperate with at least one guide slot of the receiving station to guide the ink container in a pivot motion. As discussed in detail in the Amendment and Response filed July 7, 2003, pawls 33a, 33b of Morita et al. are positioned adjacent a leading end of ink tank 30, relative to an insertion direction of ink tank 30, as evidenced by the arrow (unnumbered) in Figures 7 and 9B. Pawls 34a, 34b of Morita et al. are disposed toward a trailing end relative to an insertion direction. As stated at Column 9, Lines 1- 4 of Morita et al., ink tank 30 is rotated or pivoted about pawls 33a, 33b positioned adjacent the leading edge of the ink tank. Thus, Morita et al. does not show, teach or suggest a first guide feature disposed toward a trailing end relative to an insertion direction, wherein the first guide feature is configured to cooperate with the at least one guide slot to guide the ink container in a pivot motion. Rather, Morita et al. teaches features adjacent the leading edge that cooperate to guide the ink container in a pivot motion.

Combining Morita et al. with Suzuki et al. and Kashimura et al. does not overcome the deficiency of Morita et al. As discussed above, Suzuki et al. does not teach an ink container having a guide feature positioned toward the trailing end for guiding the trailing ink container in a pivot motion. Rather, all pivoting motion of the ink tanks 2a, 2b of Suzuki et al. occur as a result of the motion of holder 70 about projection 71. Projection 71 is adjacent the leading edge of ink tanks 2a, 2b. Thus, Suzuki et al., like Morita et al., teaches features adjacent the leading edge that cooperate to guide the ink

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container in a pivot motion. Kashimura et al. is of no further assistance in overcoming the deficiencies of Morita et al. and Suzuki et al. Kashimura et al. clearly teaches guide pins 10b adjacent the leading edge of cartridge 10. Guide pins 10b cooperate with slots 20b to guide the ink container 10 in a pivot motion.

Thus, even if one skilled in the art were to combine the teachings of Morita et al., Suzuki et al. and Kashimura et al., as suggested by the Examiner, **the references consistently teach that the features that cooperate to guide the ink container in a pivot motion are positioned on a sidewall that is adjacent the leading edge of the ink container.** The combination of references as suggested by the Examiner does not, and cannot, result in an ink container having a first guide feature disposed toward a trailing end of the ink container relative to an insertion direction, and the first guide feature configured to cooperate with at least one guide slot of the receiving station to guide the ink container in a pivot motion, as set forth in independent claim 1.

For at least the reasons set forth above, independent claim 1 is allowable over the combination of references, and Applicant respectfully requests the withdrawal of the rejection of claim 1 under 35 U.S.C. §102(e).

Dependent claims 2-7 each depend, either directly or indirectly, from independent claim 1, which is allowable for the reasons set forth above. Therefore, claims 2-7 are also in allowable condition, and Applicant respectfully requests the withdrawal of the rejection of claims 2-7 under 35 U.S.C. §102(e).

Moreover, the combination of Morita et al., Suzuki et al. and Kashimura et al. does not disclose each of the elements of independent claim 8. Independent claim 8 sets forth an ink container housing defining a leading end and a trailing end relative to an insertion direction and a pair of sidewalls each extending between the leading and trailing ends. A first and second pair of guide features extend outwardly from each of the pair of sidewalls.

Morita et al. discloses first and second pairs of guide features (pawls 33a, 33b positioned adjacent a leading end of ink tank 30, and pawls 34a, 34b positioned toward a trailing end), respectively. However, pawls 33a, 33b, 34a, 34b are all positioned on the same side wall of ink tank 30, and not on a pair of sidewalls as required by claim 8. Suzuki et al. discloses a single pair of guide features (projections 49) adjacent a trailing

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end on a pair of side walls. Kashimura et al. discloses a single pair of guide features (pins 10b) adjacent a leading end on a pair of side walls.

For at least the reasons set forth above, independent claim 8 is allowable over the combination of references, and Applicant respectfully requests the withdrawal of the rejection of claim 8 under 35 U.S.C. §102(e).

Dependent claims 9-14 depend, either directly or indirectly, from independent claim 8, which is allowable for the reasons set forth above. Therefore, claims 9-14 are also in allowable condition, and Applicant respectfully requests the withdrawal of the rejection of claims 9-14 under 35 U.S.C. §103.

Independent claim 15 sets forth a replaceable ink container having an engagement feature disposed on a leading edge of the replaceable ink container. The engagement feature is configured to engage corresponding engagement features associated with the receiving station. The replaceable ink container further has a guide slot engagement feature disposed toward a trailing end. When the engagement feature disposed on the leading edge of the replaceable ink container is engaged with the corresponding engagement features associated with the receiving station, the guide slot engagement feature interacts with a pair of guide slots to guide the replaceable ink container into the receiving.

It is respectfully submitted that none of Morita et al., Suzuki et al., or Kashimura et al. show, teach or suggest an engagement feature **disposed on a leading edge** of the replaceable ink container. Rather, any guide or engagement features of the references are on a side (relative to the insertion direction) of the ink container. Accordingly, for at least this reason, the references cannot be combined to achieve the invention of independent claim 15. Therefore, Applicants respectfully request withdrawal of the rejection of independent claim 15 under 35 U.S.C. §102(e).

Dependent claim 16 depends from independent claim 15, which is allowable for the reasons set forth above. Therefore, claim 16 is also in allowable condition, and Applicant respectfully requests the withdrawal of the rejection of claim 16 under 35 U.S.C. §102(e).

With respect to the method of independent claim 17, the Examiner found the method steps of the claim to be inherently taught in the apparatus limitations as detailed

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in the Office Action. Claim 17 claims a method for inserting a replaceable ink container into a receiving station of an ink jet printing system, and includes engaging an engagement feature on a leading edge of the replaceable ink container with corresponding engagement features associated with the receiving station. The method further includes engaging a pair of guide features disposed toward a trailing end of the ink container, wherein each of the pair of guide features guide the replaceable ink container along an arc about a pivot axis toward a bottom surface of the receiving station.

As discussed above with respect to independent claim 15, none of the cited references have an engagement feature **on a leading edge** of the replaceable ink container for engagement with a corresponding engagement feature associated with the receiving station. Rather, the engagement features disclosed in the references are on a side surface of the ink container. Accordingly, the combination of references does not and cannot make obvious “engaging an engagement feature **on a leading edge** of the replaceable ink container with a corresponding engagement feature associated with the receiving station”.

In addition, as discussed with respect to independent claim 1, Morita et al., Suzuki et al. and Kashimura et al., consistently teach that the features that cooperate to guide the ink container about a pivot axis are positioned adjacent the **leading edge** of the ink container. The combination of references as suggested by the Examiner does not, and cannot, result in an ink container having a pair of guide features disposed toward a **trailing end** of the ink container, wherein each of the pair of guide features guide the replaceable ink container along an arc about a pivot axis toward a bottom surface of the receiving station, as set forth in independent claim 17.

Accordingly, for at least the reasons provided, the references cannot be combined to achieve the subject matter of independent claim 17, and withdrawal of the rejection of claim 17 under 35 U.S.C. §102(e) is respectfully requested.

Dependent claim 18 depends from independent claim 17, which is allowable for the reasons set forth above. Therefore, claim 18 is also in allowable condition, and Applicant respectfully requests the withdrawal of the rejection of claim 18 under 35 U.S.C. §102(e).



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CONCLUSION

In light of the above, Applicant believes independent claims 1, 8, 15 and 17, and the claims depending therefrom are in allowable condition. Allowance of these claims is respectfully requested.

Any inquiry regarding this Amendment and Response should be directed to either Matthew B. McNutt at Telephone No. (512) 231-0531, Facsimile No. (512) 231-0540, or Dmitry Milikovsky at Telephone No. (858) 655-3251, Facsimile No. (858) 655-5859. In addition, all correspondence should continue to be directed to the following address:

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